

Spencer Kellogg and Sons, Inc., Pier and Transit Shed
139-155 River Road
Edgewater
Bergen County
New Jersey

HAER NO. NJ-48

HAER
NJ,
2-EDWA,
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

HISTORIC AMERICAN ENGINEERING RECORD

Spencer Kellogg and Sons, Inc., Pier and Transit Shed

HAER No. NJ-48

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Location: 139-155 River Road, on the Hudson River
Borough of Edgewater, Bergen County, New Jersey

Date of Construction: c. 1915

Builder/Engineer: Stillman-Delehanty-Ferris Co.
Jersey City, New Jersey

Present Owner: Spencer Kellogg Division of Textron, Inc.
120 Delaware Avenue, Box 807
Buffalo, New York 14240

Present Use: Vacant

Significance: This steel-framed, iron-sided transit shed on its wooden pier is significant as an extremely rare survival of a once typical form of commercial waterfront structure in the Port of New York, and as the only intact representative of the deep water handling facilities once used by the cluster of oilseed processing plants in Edgewater. It was part of the first generation of such structures in the port, and while the full extent of sheds built in this period (c. 1900-1925) remains incompletely undocumented, the Spencer Kellogg site is now one of only about a dozen metal sheds with the characteristic side doors in alternating bays. All of the other surviving sheds of this class, some of which are badly deteriorated, were built for general cargo handling and retain no handling equipment aside from some cargo masts and interior railroad tracks, making the Spencer Kellogg shed unique in its specific industrial features. The wood substructure remains a more common and well documented feature of port construction, and by itself is less significant.

Transitted by: Jean P. Yearby, HAER, 1985, from research conducted by Michael S. Raber, Raber Associates, 1985

The transit shed includes remains of conveying equipment typical of the three oilseed processing complexes built in Edgewater c. 1909-1922, adding to the site's significance as part of a very small but nationally important class of such Atlantic deep water plants, unique to this borough. No waterfront facilities of the Midland Linseed Products or Archer-Daniels Linseed companies, which became the Archer-Daniels-Midland Company, survive. An elevated belt conveyor and a wooden floor conveyor, part of original Spencer Kellogg and Sons, Inc., pier and transit shed construction, remain essentially intact. The conveyors are inoperable, and the site is missing other unloading and handling equipment with which the conveyors once articulated, but the extant remains and other documentation allow for reconstruction of the shed's important functional relationships with the processing and storage facilities in the Spencer Kellogg complex. Much of this complex, including structures immediately upland of the pier, remains intact, although all processing equipment is gone. The pier and transit shed thus retains some of its original physical context as an industrial materials handling site.

Project Information:

A. Agency:

New York District, U. S. Army Corps of Engineers
26 Federal Plaza
New York, New York 10278

B. Project removing the pier and transit shed:

New York Harbor Collection and Removal of Drift Project
Edgewater, New Jersey Reach

C. Documentation preparation:

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New York, NY 10022

D. Dates of preparation:

Researched and photographed-
May 1983-December 1984
Completed February 8, 1985

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of erection: c. 1915, from original drawings dated January-March 1915 (Photographs 1-5)
2. Architect: Stillman-Delehanty-Ferris Co., Jersey City, New Jersey (Photographs 1-5)
3. Original and subsequent owners: References are in the Bergen County Register's Office, Hackensack, New Jersey.

1905 Deed, May 18, 1905, recorded in Deed Book 613, page 471. New York Transit Company to Spencer Kellogg.

All subsequent transactions reflect only changes in corporate structure or ownership. The Spencer Kellogg Company, established in 1894 with headquarters in Buffalo and incorporated in 1912 as Spencer Kellogg and Sons, Inc. Textron, Inc., bought the corporation in 1961 (Eastman 1968: 43).

1912 Deed, August 14, 1912, recorded in Deed Book 831, page 406. Spencer and June M. Kellogg to Spencer Kellogg and Sons, Inc.

1961 Deed, July 27, 1961, recorded in Book 4269, pages 204-12. Spencer Kellogg and Sons, Inc., to Textron, Inc.

4. Builder: Spencer Kellogg and Sons, Inc.
5. Original plans and construction: Extant 1915 plans, amplified by later aerial photographs, indicate the present pier and one-story transit shed exterior are original and essentially unmodified. Original construction included two or three seed unloading belt hoists or marine legs on the roof, one or two elevated belt conveyors and one floor conveyor in the shed, and a headhouse with seed elevating and conveying equipment. All handling equipment was electric-powered. The publicly supplied water line and dry sprinkler system was also probably original, along with up to three electric centrifugal salt water pumps (Fire Insurance Rating Organization of New Jersey, 1954; Photographs 1-6; Figure 2).

6. Alterations and additions: Between c. 1943 and mid-1948, the company replaced the three belt hoists with two traveling pneumatic unloaders and fourteen metal hoppers on the roof, to feed the easternmost elevated belt conveyor. Metal-framed, hipped skylights probably replaced the original flat skylights at this time. In 1952 or 1953, the company added a steam driven centrifugal salt water pump, probably in a corrugated metal enclosure on the shed deck, to the original pumps. A composition tar and gravel roof was laid over the original roof boards at some undocumented point in the period of active shed use. By 1964-65, all pumps, electric motors powering the handling equipment, travelling pneumatic unloaders, and headhouse conveying/elevating equipment, were removed. (U. S. Army Corps of Engineers 1926-1965; Fire Insurance Rating Organization of New Jersey 1964; Photographs 3, 7-14.)

B. Historical Context

1. Oilseed Processing in Edgewater

The Spencer Kellogg Company was the first of the three large independent American linseed oil companies to build a deep water plant in Edgewater, responding to the resurgence of imported flaxseed supplies in 1909. Earlier East Coast plants which had profitably used higher quality imported flaxseed after c. 1840-50 to replace the westward-moving domestic sources, foundered and all but disappeared by 1900 in the face of greatly increased domestic flaxseed production and higher tariffs on imported flaxseed. When Argentine imports appeared in 1909, however, there were only three large and healthy American firms left to take advantage of the new, favorable import tariff situation. Most other firms, many with older plants in Ohio far from domestic supply sources, unsuccessfully began the National Linseed Oil Company trust in 1887. The three large independents which did not join had too much of the industry's processing capacity to give the trust its desired monopoly, and National Linseed Oil suffered a long series of failures and corporate rearrangements before finally disappearing in 1928 in a joint purchase by the corporate descendants of the three independents, Spencer Kellogg and Sons, Inc., and the Archer-Daniels-Midland Company. By 1909, the Spencer Kellogg Company, the Archer-Daniels Linseed Company, and the Midland Linseed Products Company had all established large plants in Minneapolis, relatively near to major domestic flaxseed sources, and were able to expand to deep water sites. The Spencer Kellogg Company also had the largest linseed oil processing plant in the United States at its home base in Buffalo at this time (Eastman 1968: 27-46).

Anticipating the renewed availability of imported flaxseed, Spencer Kellogg purchased the Edgewater property in 1905, but did not begin plant construction until imports were imminent in 1909. Heavy waterfront development, dominated by railroad terminals, on available deep water sites along the west side of the Port of New York made Edgewater's low taxes, largely undeveloped if marshy shoreline, and new transportation infrastructure attractive to expanding industries requiring marine connections. Between 1894 and 1907, New York, Susquehanna & Western Railroad and Erie Railroad lines, both through the nearby Palisades and along the shore south to other terminals, began serving new Edgewater freight needs, while thousands of industrial workers from outside the borough began commuting to petroleum oil processing, sugar refining, and varied chemical plants on the Bergen County Traction Company's trolley line to Leonia and the new ferry to 130th Street in Manhattan. The Spencer Kellogg Company built much of its eventual Edgewater plant in 1909-10, followed in 1911 by a Midland Linseed Products Company plant to the north. Archer-Daniels arrived later, in 1922, perhaps to take advantage of 1921 management turmoil at Midland which weakened the latter firm sufficiently to precipitate the 1923 sale of Midland to Archer-Daniels and a new merged Archer-Daniels-Midland Company (New York, New Jersey Port and Harbor Development Commission 1920: 116-17; Eastman 1968: 30-45; Whittaker 1968; Work Projects Administration n.d.; Westervelt 1923, I: 354; Raber, Flagg et al. 1984: 24-26).

Spencer Kellogg operations in Edgewater changed several times between c. 1935 and 1955 in response to changes in oilseed processing technology and availability of raw material supplies. The initial emphasis was on conversion of flaxseed to linseed oil products and linseed cake or meal (the fodder being a byproduct) using the hydraulic presses common to the industry c. 1850-1940, with additional production of various special oils. By 1924, this plant with 190 such presses was the largest linseed oil producing site in the United States. Hydraulic presses involved high production costs and relatively high linseed oil residue in cakes, which had less commercial value than the oil, and by the 1930s newer mechanical screw presses or expellers promised to offset these problems. Expellers produced linseed meal but not linseed cake, and with flaxseed imports increasingly scarce again after World War II cake production gradually ceased by the late 1940s as new expellers processed most or all of the flaxseed. The company began using the older hydraulic presses to process foreign castor beans before the war, producing tung oil and distilling the residue with heptane gasoline for sale as a bagged fertilizer. By 1954, the

elimination of most foreign production components left this and the other Edgewater plants at an increasingly uncompetitive location. High labor costs and overabundant domestic flaxseed supplies were making linseed oil production less profitable industry-wide, and by 1960 Archer-Daniels-Midland closed all its plants. At about this time, Spencer-Kellogg and Sons, Inc., ceased all milling, fertilizer and vegetable oil extraction operations at Edgewater, but continued to process castor oils in electric cookers. A salt company leased inactive parts of the plant briefly. After the corporation's purchase by Textron, Inc., in 1961, the southern third of the property -- including the original refinery, and all castor bean storage and processing facilities -- was leveled and sold to adjacent Lever Bros., Inc. Oil processing continued until the early 1980s with a much reduced staff (Fire Insurance Rating Organization of New Jersey 1954, 1964; Eastman 1968; U. S. Army Corps of Engineers 1926-1965; personal communications, William Dondarski and Andrew Dujnech).

2. Industrial Waterfront Facilities

The Spencer Kellogg Company, incorporated in 1912, did not add a pier to its Edgewater plant until c. 1915. The delay in pier construction may relate to delays in extending the federal pierhead line in the Hudson River until 1914, after much local industrial pressure, but the 1915 pier actually extended only to the federal bulkhead line. Plant establishment, including construction of mill and refining facilities, probably precluded finishing the waterfront immediately. Marine operations here, prior to pier construction, were probably somewhat cumbersome; the property's narrow waterfront offered limited wharfage, and landfill added shortly before or during the company's early tenure covered the site of a nineteenth century pier.

The pier and transit shed designed by the Stillman-Delehanty-Ferris Company of Jersey City was entirely typical of contemporary marine construction in the Port of New York. The wooden substructure, described below and illustrated in Photographs 2 and 4, represented a form common in the port by c. 1850, and almost universal in new narrow pier construction after the Civil War. With the demise of marine borers in the port by about the mid-nineteenth century, thanks to increasing urban water pollution, open wood pile piers with wood decks became attractive possibilities to commercial or industrial builders. They were cheaper and faster to build or repair than the varied cribwork substructures of previous generations, and were more elastic in terms of both resistance to collision and ease of site expansion to meet changing facility demands.

By c. 1880, crib elements in narrow piers disappeared in the port, although they remained important features of bulkhead and large solid fill pier construction well into the present century. With adequate diagonal bracing of pile rows common in pile piers by c. 1900, in part because of standards introduced by the New York City Department of Docks and Ferries, the open pile pier assumed a form which remained commercially viable until after World War II, especially for smaller commercial/industrial structures. Rising timber costs, concern over fire protection, and evolving forms of concrete use led to gradual replacement of the classic wooden pier in large public, railroad, or specialized industrial piers beginning early in the century (Raber, Flagg et al. 1984: 51-65).

The widespread appearance of wooden transit or pier sheds at this port in the 1870s corresponded to the great increase in lighterage after the growth of large railroad marine terminals, and to reforms in New York City waterfront regulation, making private investments in pier construction more viable. With some notable exceptions in railroad and public construction, the vast majority of such sheds ever built in the port have been single story, 50-80 feet wide with truss-supported roofs of wood plank covered by tar and gravel, or by slag and cement. The Spencer Kellogg and Sons, Inc. shed was apparently somewhat unusual in its evident original lack of cover material over the roof boards (see Photograph 3). Changes in shed material did not significantly alter basic shed forms. By the early 1880s, galvanized corrugated iron replaced wood and shed siding, although shed frames remained wood until early in the twentieth century, when steel or iron emerged as cheaper superstructure materials. Steel framing and iron siding remained the dominant shed materials in the port, with some use of aluminum siding after World War II. The principal design change, beginning around World War I, was the placement of cargo doors in every exterior shed bay; most earlier sheds had doors in alternating bays. Protecting the light frames from fire was a continual problem, and most smaller commercial or industrial sheds such as the Spencer Kellogg and Sons, Inc., site did no more than add sprinkler systems. More expensive jacketing of steel in tile, galvanized sheet iron, or reinforced concrete appeared at railroad or publicly financed projects (Raber, Flagg et al. 1984: 77-89).

Most transit sheds served to shelter and temporarily store general cargo during transfers between ship and warehouse, rail, or dray/truck facilities. Cargo masts or hoists, portable electric winches, and sometimes railroad tracks leading to marine terminal or regional lines comprised virtually all the

permanent equipment at most such sheds throughout the twentieth century era of break bulk handling at this port. More specialized stationary handling equipment for bulk commodities or products appeared at a much smaller number of industrial sites, public coal-fired electric utility plants or storage yards, railroad and other commercial coal handling facilities, and public or private grain elevators (e.g., New York Department of Docks and Ferries 1912). The full range and nature of such equipment in the port, c. 1880-1950, when these sites were most active, remains undocumented. It is already clear, however, that very few transit sheds also featured bulk handling facilities and that, of those sheds which had such features, the Spencer Kellogg and Sons, Inc. shed is the only one left in the port predating 1920 with any original equipment (Raber and Flagg 1984). In most cases, the requirements of bulk products handling did not require shed-like shelter, and the unusual combination of facilities at the Spencer Kellogg and Sons, Inc. reflects both the company's diversified production and some general requirements of the oilseed industry.

Flaxseed handling equipment at all three Edgewater oilseed plants derived from contemporary grain handling methods, especially those methods used at marine grain elevators. Elevator legs or pneumatic unloaders, the former consisting of stationary or mobile endless belts with buckets, effected most upward vertical movements, while belt or screw conveyors moved material horizontally (Ketchum 1907: 214-19; Raber, Parrott et al 1984: 96-107). The more expensive but faster pneumatic unloaders which appeared in early twentieth century Midwestern grain elevators did not serve any Edgewater oilseed plants until the 1920s and the older Spencer Kellogg and Sons, Inc. plant retained some form of belt hoist or marine leg into the 1940s. Belt conveyors were common to the Edgewater plants, with the Midland Linseed Products Company complex featuring a 2000-foot conveyor from its pier to its plant buildings, and the Midland pier also had some form of undescribed escalator or hoisting tower (New York City Department of Docks and Ferries 1912: 38). The 1922 Archer-Daniels facilities, which evidently never involved export of linseed cakes via the pier, had no covered pier but, rather, by 1932, an iron-on-steel framework over the conveyors. This pier handled bulk flaxseed and grain, and vegetable and fish oils by pipe. At the adjacent Midlands pier, which handled linseed cake export and, initially, flaxseed receipt, there was an all-wood transit shed of which nothing now remains. Linseed cake, a cattle fodder with an important European market, c. 1850-1935, required more protected shipping conditions, as did the oil drums common at the Edgewater sites after

World War II when the decline of flaxseed imports led to major production changes noted above. The Spencer Kellogg and Sons, Inc. plant was the most diversified of the Edgewater oilseed complexes, processing coconut oil and castor beans as well as flaxseed prior to c. 1940, and along with its seed moving equipment, it required space for receiving these bulk materials which arrived loose, bagged, or drummed. These requirements, and the fact that the plant was adjacent to the river -- unlike the Archer-Daniels-Midland complex, where processing occurred over 1000 feet from shore -- appear to be the basis for the Spencer Kellogg pier's distinctive features among local oilseed plants: a contemporary transit shed with cargo doors, supporting seed moving equipment, and with a floor conveyor for linseed cake running from the plant through the length of the shed. Combining these various functions in a lightweight shed apparently affected some handling facilities design, perhaps producing innovations in elevating arrangements, as discussed below in Section II.D. Shifting shed functions, in response to production and raw material changes at this plant, left the shed largely unchanged, attesting to the versatility of the relatively simple original design (U. S. Army Corps of Engineers 1926, 1932; Eastman 1968: 128).

PART II. ARCHITECTURAL AND ENGINEERING INFORMATION

A. General Statement:

1. Character: All original foundation and framing elements, and all original exterior surfaces, remain in place, including the headhouse. The roof retains the hoppers added with the second, pneumatic unloading equipment, along with broken I-beam fragments of the traveling unloader supports. Inside the shed, the elevated belt conveyor under the marine unloading system is intact from its eastern end to the headhouse, with excellent visible articulation of the hoppers and the conveyor. The floor conveyor, now largely covered with belting, is intact through the shed along with an adjoining floor conveyor from the adjacent plant building, with minor modifications noted below. No elevating, weighing, or conveying equipment survives in the headhouse, nor do any of the electric motors which powered this equipment or any of the pumps which provided salt water hydrant and plant service. Non-functioning water lines and sprinklers remain in place under the roof. Photographs 9-21 document conditions in September 1984.

- Condition of fabric: Although the shed walls and roof are essentially intact, the pier is deteriorating, especially on the north side, with attendant damage to adjacent decking and shed walls (Photographs 9-13).

B. Description of Exterior:

1. Dimensions: Pier: 435 x 62 feet
Transit Shed: 443 x 57 feet, including headhouse, with the westernmost 28 feet on the upland; gable roof peaks 23 feet above the pier deck (Figure 2; Photographs 1 and 3)
2. Foundations: A wood pile, wood decked pier supports the transit shed, with piles about fifty feet long on 3.33 or 3.78 foot transverse centers set in bents eight feet apart. The outer end of the pier has double bents, a standard feature of such substructures. Floor conveyor support modified pile arrangements slightly (Photographs 2 and 4). The headhouse rests on piles in fill behind the timber bulkhead (Photograph 1).
3. Walls:
 - a. Sheathing: Galvanized corrugated iron sheets, 10.5 feet long x 8.5 feet high and riveted to the steel column braces noted below, cover the east, north and south shed walls, as well as the west corners. In some places, the 1.83 foot space below the lowest column brace has a concrete sill, possibly added to original construction. A brick firewall separates from the adjacent plant building. Interior wood sheathing called for in original plans was apparently never constructed (Figure 2; Photographs 3, 11, 12, and 15).
 - b. Decoration: The east face originally had raised letters, removed c. 1961, spelling SPENCER KELLOGG & SONS inc. above the single, central exterior door.
4. Structural system: Double channel beam steel columns, 18.46 feet high on 1.33 foot square steel plates bolted to the outer pier rangers, support pinned steel roof trusses with seven foot high peaks every twenty-four feet along most of the transit shed north and south walls. The columns are about 1 x .75 feet in section, with 1.17 foot high channel beams connecting column tops. The easternmost bay is 16 feet, while the westernmost containing the headhouse is 28 feet beginning at the bulkhead. Channel beams with .5 foot sections form horizontal braces between both the truss-supporting columns and the .75 foot

channel beam columns framing each door at eight-foot centers. The braces between the door jambs are eight feet below the upper channel beams, with center line heights above the deck elsewhere of 1.83, 6.83, and 11.83 feet. Alternating bays without doors have .16 foot steel rod cross bracing (Photographs 1-3, 16).

5. Bulkhead: An undocumented, inaccessible bulkhead (probably of timber), retaining unknown fill material (probably cinders) runs beneath the east end of the westernmost twenty-eight-foot bay in the transit shed. Detailed comparison of historic maps suggests bulkhead construction was part of pier construction, by which time cinder fill from the nearby Susquehanna and Western railyard was available (Bromley 1912; New Jersey Harbor Commission 1913; Sanborn Map Company 1928).

6. Openings:

- a. Doorways and doors: There are a total of thirteen sliding doors, 8 feet wide x 10 feet high, centered in all alternating bays along the south transit shed wall, in the westernmost corresponding three bays on the north wall, and in the east end wall, with ten foot (8 x 1.25 inch) white pine, covered with tin for a total thickness of .25 foot. Photographs 1, 3, 9-11, and 16-17 show sliding door spacing and tracking arrangements. The six easternmost door spaces on the north wall each have two 8 x 8 feet hinged doors, set one above the other, of similar composition (Photograph 18).

The western, brick end wall of the shed communicates with the plant through two openings, one being a hinged double metal door leading to a shipping shed off the northwest corner. There is a disarticulated hinged metal door at the southwest corner, under the small office described below in II.C (Photographs 13, 15, 16, and 19).

- b. Windows: Except for a closed four-panel window about five feet high in the north wall, within the enclosed area formerly housing salt water pumps, and three six-over-six sash windows lighting the small office in the upper southwest corner of the shed, there are no windows in the shed walls (Photographs 12, 13). Skylights described below punctuate the roof.

7. Roof:

- a. Shape, covering: The shed has a gabled roof, sloped as shown in Photograph 3, and consisting of composition tar and gravel over .5 x .1 foot (6 x 1.25 inch) roof boards (Photographs 13,, 16, and 17).
- b. Headhouse and shed: There are two steel-framed, iron-sided, gable roof structures above the roof at locations shown in Figure 2. At the western end of the transit shed, the 22-foot square headhouse, which once housed seed elevating, weighing, and conveying equipment, rises thirty-two feet above the roof peak. The north and south sides of the headhouse, each 44-over-2 hinged windows, while the east side has a door about five feet above the peak opening into a small shed-roofed enclosure and a metal stairway. On the north side of the roof, beginning about 85 feet from the headhouse, there is a smaller structure, fourteen feet square and eighteen feet high, with five windows similar to those on the headhouse and a door facing the roof peak (Photographs 1, 12-14). The smaller structure does not communicate with the transit shed interior, and may have been a tool shed. Comparison of Photographs 1, 6, and 7 suggests the shed was moved about thirty feet west of its original location when the company changed the marine unloading system in the 1940s. Section C.6 below discusses other roof structures associated with unloading equipment.
- c. Skylights: Original plans called for fifteen flat skylights, each 9.42 x 6.42 feet and parallel to the slope of the roof (Photographs 1 and 3). Inspection of the transit shed interior indicates the fifth skylight from the west, on the south side, was never built, probably because a marine leg was set up here instead (Photograph 6). Of the fourteen flat skylights built c. 1915, thirteen became hipped, metal-framed skylights when the roof unloading facilities changed. The second skylight from the east, on the north side, was removed and the space covered probably at this same time (Photographs 6-8, and 14).
- d. Pediment: An undecorated metal pediment, 27 x 2 x 2 feet, supported a flagpole above the east transit shed elevation. The flagpole is gone. Although part of the original construction, the pediment sits atop the roof peak, unlike the original design (Photographs 1 and 9).

C. Description of Interior

1. Floor plan:

- a. General arrangement: All transit shed operations east of the headhouse occurred in a virtually undivided one-story space. A corrugated iron enclosure, 30 x 20 feet on the north wall beginning about ninety-five feet from the bulkhead, surrounds the former site of the steam turbine drive salt water pump installed 1952-53 and probably dates to this installation. The floor conveyor described below runs through nearly the full length of the transit shed longitudinal center, while the elevated belt conveyor suspended from the trusses on the north side of the space runs from the headhouse to the penultimate bay (Figure 2; Photographs 1 and 21).

Beginning about five feet west of the bulkhead, three spatial divisions, arrayed north to south and of about equal length and width, define the west end of the transit shed. The northwest corner is open and, as noted, communicates with a shipping shed. The central division contains the headhouse, which, with its above-roof projection, totals some fifty-five feet in height and has four concrete-floored levels above the transit shed deck joined by open metal stairways. The southwest transit shed corner has a wood floored and wood sided office, 22 x 7 feet, elevated above the shed deck and continuous with the first level of the headhouse (Figure 2; Photographs 15, 16, and 19).

b. Headhouse:

- i. Deck Level: This lowest level housed the boot or bottom of a seed elevator discussed below, as well as the floor conveyor and its motor which were otherwise not articulated with headhouse equipment or functions.
- ii. First Level: This first concrete level, about ten feet above the deck, leads to the door of the small office south of the headhouse. A 25 h.p. electric motor, powering the surviving elevated belt conveyor, was formerly suspended from, and projected east of, steel columns resting on this first level. The belt conveyor emptied into the headhouse elevator boot via a chute through the first level. The southwest corner of this level supported the lowest of three seed hoppers, all now gone, and apparently also supported a

second elevated belt conveyor running through the transit shed west wall into the plant with hopper contents (Photographs 1 and 15). There are no remains of this second conveyor, which functioned as described in Section 11.D below.

- iii. Second Level: This level, about nine feet above the first, housed the second seed hopper (Photograph 1).
 - iv. Third Level: This level, about ten feet above the second, housed the third seed hopper or possible scale hopper (Photograph 1).
 - v. Fourth Level: This highest headhouse level, about fifteen feet above the third, had a 15 h.p. electric motor and the head of the elevator leg. A chute to the third hopper penetrated the floor (Photograph 1).
- 2. Stairs: Aside from the four open metal headhouse stairs, and the short stair from the headhouse to the roof, the only existing stairs associated with the transit shed are a two-story, open metal stair leading from the southwest roof corner to the ground southwest of the transit shed, and three vertical metal ladders descending from the south side of the roof (Photograph 13).
 - 3. Flooring: The pier deck forms the transit shed floor, and consists of two plank layers nailed to pier rangers or stringers of various sizes. Photographs 2 includes details of flooring and ranger arrangements.
 - 4. Walls and ceilings: All walls and ceilings are unfinished interior surfaces of the iron siding and roof boards noted above.
 - 5. Openings: Except in the west wall and in the small interior corrugated iron shed described above, there are no interior openings.
 - 6. Mechanical equipment and hardware:
 - a. Conveying and handling equipment:
 - i. Marine Seed Unloading Facilities:

The original seed unloading facilities, on the south side of the transit shed roof, were poorly documented belt hoists or marine legs. There are no remains of this equipment. Photograph 6 and remarks in Corps of Engineers harbor descriptions (1926, 1932, 1942), suggest three legs were part of original

construction, despite the two legs shown in the only drawing allowing for interpretation of unloading arrangements (Photograph 1). The three legs, driven by three 50 h.p. electric motors housed in three shed 14 x 10 x 8 feet perched on the edge of the roof, fed the elevated belt conveyor under the roof at three fixed points about 100 feet apart, through derricks about nineteen feet high. Each leg probably included endless belts with buckets, contained within flexible tubes of jointed sheet metal with about 1.5 foot diameters, suspended by a boom extending horizontally about 43 feet long from the derrick. The outer twenty-nine feet of each boom could apparently swing nearly 180 degrees around the cargo mast, guided by cables or ropes from an additional mast on either side. Transit shed columns supported each mast.

Part of each belt path evidently ran from each deck-bound motor to the top of its derrick, and overall belting arrangements for these legs remain unclear. The drawing in Photograph 1 suggests that each belt probably ran directly from the spout end to the top of its derrick, where it unloaded in a sharp turn before travelling into the motor shed for a return. The apparent absence of any other motors or drive trains appears to preclude more than one belt or belt path per leg. Some of these ambiguities may reflect either the presence of an undocumented equipment contractor, whose installations appear in only rough form on drawings of the transit shed architects, or the loss of some original drawings from the original full set.

While the unloading principles here were similar to those of late nineteenth and early twentieth century marine grain elevators, the mechanical arrangements at this site differed from those in most conventional movable marine or stationary elevator legs. Conventional legs usually featured a single, vertical or angled path from the point of grain or seed entry to a spout at the top, with power sources at or near the upper drums around which the belts are turned. Towers or cupolas of various kinds commonly enclosed marine or stationary legs, and the headhouse at the Spencer Kellogg and Sons, Inc., transit shed had fairly typical arrangements of this kind (Photograph 1). The company's marine legs had no towers, perhaps to avoid the expense of both additional roof structures and of a transit shed strong enough to support such structures. Instead, the company apparently lengthened the belt path, allowing the motors to rest directly on the roof, and replaced the marine towers used to clear ship gunwales with light derricks, booms, and cargo masts supporting the unloading spouts. The emphasis on lightness and economical construction may also explain another unusual feature of these legs: where most legs had separately enclosed paths for each belt direction (i.e., up and down shafts), a single tubular spout enclosed both directions here (Figure 3).

The single movable bucket hoist planned for the north side of the transit shed roof was apparently never built (Photographs 1, 6; U. S. Army Corps of Engineers 1926).

The original marine legs or belt hoists were relatively inflexible means of unloading ships. By mid-1948, Spencer Kellogg and Sons, Inc., replaced them with two pneumatic unloaders, which travelled on a set of rails spanning the roof for about 350 feet. Each unloader could move at least 50 tons/hour to the belt conveyor, via the fourteen hoppers which still penetrate the roof today. There is no information on pneumatic unloader power arrangements, and only the feet of the rail supports survive. Each metal hopper is about 1.5 x 5 feet in plan and 6 feet high above the roof, and has a cover (Photographs 7, 8, 12, 14, and 17; U. S. Army Corps of Engineers 1953).

ii. Conveyors:

There are two elevated belt conveyors in the transit shed. The easternmost conveyor survives, and was part of original shed construction. It is 400 feet long and 2 feet wide, with a standard concave rubber belt section on rollers, suspended four feet below the roof trusses with a center line seventeen feet from the south shed wall. Powered by a 25 h.p. electric motor placed above the deck, as noted, it received flaxseed from the original derrick-supported spouts and later hoppers on the roof, and emptied into the boot of the headhouse elevator via a chute (Figure 2; Photographs 1, 16, 17, and 20 [Photograph 1 does not show the plan location of the motor]).

The second elevator conveyor, removed by c. 1965, ran from the bottom of the headhouse hoppers into the plant, as described above. It was probably similar in design to the surviving elevated conveyor, and had a similar power source. Running about 265 feet through the adjacent plant building, it fed a second elevator which lifted flaxseed and castor beans to seed cleaning equipment on roof houses, and/or to storage tanks along the south side of the plant complex, via several horizontal belt or screw conveyors. It was either original to transit shed construction, or perhaps even preceded it in some form (Figures 2 and 4; Photographs 1 and 7).

The surviving floor conveyor for linseed cakes, part of original construction, runs 443 feet along the center of the deck to a similar conveyor from the adjacent plant building. Powered by a 25 h.p. motor which once stood on the deck east of the headhouse, it consists of maple slats 2 x .83 x .125 feet in size, supported by pairs of metal sprockets. The linseed cakes it carried were 2 x 3 x .16 feet. When cake production ceased and oil drum handling for raw and finished materials became important at this plant, the company modified the westernmost thirty feet of the conveyor, replacing the slats with steel rollers 2.2 feet long and .2 feet in diameter (Figure 2; Photographs 1, 4, 5, 15, and 19).

iii. Headhouse Elevator:

A standard grain leg, powered by a 15 h.p. electric motor and feeding the uppermost of three hoppers as noted above, lifted flaxseed and possibly castor beans about 48 feet from a boot fed by the eastern elevated conveyor (Photograph 1).

- b. Oil lines: The north side of the transit shed retains a .5 foot fuel oil line for plant processing facilities and two vegetable oil lines fed a series of storage tanks north and west of the pier leading towards a shortening plant. The fuel oil line fed two or three storage tanks immediately northwest of the pier (U. S. Army Corps of Engineers 1932, 1942, 1953).
 - c. Water: From public mains on River Road, an inactive .5 foot water line feeds the dry sprinkler system, originally amplified by hose reels. The sprinkler system was either original or added within about ten years of shed construction. Salt water for plant hydrants came through three electric centrifugal pumps, of unclear date; by 1953, these pumps served as reserves for a new steam turbine driven centrifugal pump. The plant boiler fed a steam line to this pump, a line which may have been original (Figure 2; Photograph 1).
 - e. Lights: The plant A.C. generator powered a number of flood lights inside and outside the transit shed until the early 1960s, when public power replaced plant sources (Photographs 1, 12, 13, 16, 19, and 21).
- D. Transit Shed Operation: The transit shed served as the point of entry and departure for all raw and finished material not moved by rail. Until c. 1950, the marine unloading equipment on the roof, the elevated conveyors, and the headhouse with weighing facilities handled flaxseed, and possibly castor beans. Castor bean unloading processes remain incompletely documented, although bean movement out of the shed via the western elevated conveyor suggests the use of the facilities on the south side of the roof. Castor beans and flaxseed arrived in bags, which were stored temporarily on the shed deck. Mechanical seed and bean handling spanned the period c. 1915-1959. Fuel and vegetable oils generally arrived on the north side of the pier, for transfer via the pipe lines, from c. 1940-1980, although oil receipt from the south side was possible by running pipe across the pier.

Until the end of linseed cake production, the principle outward movement of finished products was the passage of bagged cakes on the floor conveyor for shipping on either side of the shed via the cargo doors. Bagged castor pomace fertilizer, produced c. 1935-1959, was stored in the shed prior to shipping; bag movement mechanisms from the plant to the pier remain undocumented. Between c. 1948-1980, oil drum handling and shipping became increasingly prominent, eventually being the only outward movement. The company used three forklift trucks with drum grabs for an unknown period beginning c. 1950, and added several drum staging structures northwest of the pier.

E. Site

1. General setting and orientation: Spencer Kellogg and Sons, Inc. developed its complex in Edgewater between River Road and the Hudson River, on a narrow piece of property 1,250-feet east-west and in most places only 250 feet north-south, at the extreme south end of the borough in a neighborhood known as Shadyside. The earliest industrialization in what later became the borough began here in the 1960s, and the waterfront at and around the Spencer Kellogg complex was heavily industrialized for about a century. Petroleum and chemical works started this sequence, and defined most of its substance with the addition of various vegetable product processors such as the Spencer Kellogg and Corn Products sites (Photographs 6, 7; Raber, Flagg et al. 1984: 24-27; 91-105).

Figure 4 shows the relationship of the pier to the rest of the complex, c. 1954, when virtually all of the buildings ever constructed on the property were still standing. In general, three east-west axes defined the complex east of the Susquehanna and Western tracks near River Road. Seed or bean storage and primary processing using hydraulic presses occupied the south tier of facilities, in which the distilling or extracting plant for castor oil residue processing was added somewhat later, c. 1935-40. The central tier, behind the pier, was focused on linseed cake production and shipping until c. 1935-45, with the building adjacent to the pier apparently a staging area for bagged cake conveyance. Seed or bean cleaning facilities occupied roof houses in this tier, as noted above. The screw presses, or expellers, which replaced the hydraulic presses in flaxseed processing, were installed in the west end of the central pier, and, with the increased concentration on oil processing and shipping, the building adjacent to the pier became a drum filling site. The north tier was apparently developed last, c. 1945-50, as drum handling and vegetable oil processing increased. Vegetable oil storage tanks, arrayed west of the electric cooker refinery and feeding into the vegetable oil shortening plant built west of the railroad tracks, filled most of this space. Two sheds for drum handling appeared in this period north of the drum filling building behind the pier (Photographs 6, 7; Fire Insurance Rating Organization of New Jersey 1954, 1964; personal communications, William Dondarski and Andrew Dujnech).

2. Historic landscape design: The Shadyside area emerged as an industrial community in the late nineteenth century, at the south end of a salt marsh known as Mordaniz Meadow during the preceding era of scattered Dutch-English-American shoreline

farms, c. 1670-1850. Very limited level land between the Palisades and the Hudson in this vicinity restrained both agrarian and earlier industrial development, leaving the Edgewater area dependent for transport on one shore road and various ferries until the 1890s. The poorly documented petroleum and chemical companies which began to develop the Shadyside waterfront for barge traffic probably came because of very cheap land, long distances to residential communities with potential objections to their operations, and the relative ease of filling the marsh's narrow southern tip. Waterfront development required both fill to support industrial facilities, and combinations of dredging and pier construction to create navigable wharfage in the shallow river margins immediately offshore. Local industrial waste products were the source of Shadyside fill. Federal pierhead line limits and the lack of good freight or passenger transportation links kept industrial waterfront growth small and barge-oriented until after 1894. The modern Shadyside waterfront, spreading north to become Edgewater's principal industrial and tax base, was characterized after c. 1915 by numerous piers serving transoceanic and coastal shipping labor (Raber, Flagg et al. 1984: 20-26; 92-95).

Spencer Kellogg's 1905 purchase apparently included the site of the late nineteenth century Hudson River Oil Works, with some fill over and beyond the marsh and a pier several hundred feet long. Plant construction beginning in 1909 included adding new fill and creating several successive bulkheads at and beyond the end of the earlier pier, creating new land at least 200 feet wide east-west. The last bulkhead, associated with the pier and transit shed, appears to postdate initial plant construction, and was probably built about 50 feet beyond a bulkhead completed by c. 1912. Pier construction and maintenance included dredging on all sides. Original plans called for maintaining a 30-foot depth below mean low water on the south side, and a 15-foot depth on the north side, anticipating a proposed division between transoceanic steamers with flaxseed and smaller harbor craft. Subsequent data indicate the company maintained equal depths on both sides, thereby allowing for shiploading of exports as well as receipt of short-born raw materials or fuels, especially oils, not conducive to the available mechanical handling facilities on the transit shed's side (Photograph 1; Raber, Flagg et al. 1984: U. S. Army Corps of Engineers 1926-1965).

PART III. SOURCES OF INFORMATION

A. Original Drawings

The Spencer Kellogg Division of Textron, Inc., retains an incomplete set of blueprints produced in 1915 by the Stillman-Delehanty-Ferris Company, almost certain created as part of pier and transit shed design. These prints, reproduced in Photographs 1-5 and detailed below in the List of Photographs, are in fair to poor condition, with some edge deterioration preventing full title and print number identification. It is clear, however, that there were at least four additional drawings in the original set. The prints, obtained from company offices in Hackensack, NJ, will be available in archives at Spencer Kellogg headquarters, 120 Delaware Avenue, Box 807, Buffalo, NY 14240, 716-852-5850, Attn: Paul Reimondo, Vice President/Comptroller.

B. Early Views:

Photographs 6-8, described in more detail below, are aerial and water-based views of the pier and transit shed exterior in the 1940s. The Spencer Kellogg and Sons, Inc., in-house publication Laboratory Letters, now available as an irregular series in company archives, includes three other exterior views taken c. 1931, 1940, and 1948, some of which show the use of the north side of the pier by transoceanic vessels, but none of which provide additional data on transit shed handling facilities:

- | | |
|------|--|
| 1931 | "Kellogg's Edgewater Dock," a water-based view of the east elevation, with ships from Argentina and Philadelphia on the south and north sides of the pier, respectively; original lettering on the shed appears clearly. |
| 1940 | "General view of the Kellogg plant at Edgewater N.J.," a land-based view from higher ground to the west, in which only the transit shed headhouse is visible behind other plant structures. |
| 1940 | "The Dock," a water-based view from the southeast, showing the SS Gertrude Kellogg discharging Phillipine coconut oil from the south side of the pier; the company had a small fleet of its own. |

C. Interviews:

William Dondarski, former Edgewater plant manager, May 1983 and May 1984.

Andres Dujnech, former Edgewater plant purchasing agent, September 1984.

Paul Reimondo, Vice President/Comptroller, Spencer Kellogg Division of Textron, Inc., December 1984.

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1. Unpublished sources:

Fire Insurance Rating Organization of New Jersey, The

1954 Complete Report, File E.I.B. 5794, A.S.D. 238, February 16, 1954: Spencer Kellogg and Sons, Inc. Inspected by James Harvey. On file, F.I.R.O. offices, Newark, NJ.

1964 Reinspection Report, File E.I.B. 5794, A.S.D. 238, February 18, 1964: Spencer Kellogg, Division of Textron, Inc. Inspected by A. J. Platz. On file, F.I.R.O. offices, Newark, NJ.

Raber, Michael S., and Thomas R. Flagg

1984 Survey Level Study and Documentation for Determination of Eligibility, for Spencer Kellogg and Sons, Inc., Pier and Transit Shed, Borough of Edgewater, Bergen County, New Jersey. On file, New York District, U. S. Army Corps of Engineers.

Raber, Michael S., Thomas R. Flagg, John Antici, and Ernest A. Weigand

1984 Final Report. Cultural Resources Reconnaissance, Edgewater, New Jersey Reach: New York Harbor Collection and Removal of Drift Project. On file, New York District, U. S. Army Corps of Engineers.

Raber, Michael S., Thomas R. Flagg, Charles Parrott, Roselle L. Henn, Jed Levin, and Ernest A. Wiegand

1984 Final Report. Cultural Resources Investigation in Brooklyn Reach 1: New York Harbor Collection and Removal of Drift Project. On file, New York District, U. S. Army Corps of Engineers.

Work Projects Administration, Writers Program

n.d. Untitled historical notes on Edgewater, NJ. On file, Edgewater Public Library.

2. Published sources:

Bromley, G. W.. Atlas of Bergen County, New Jersey. New York: G. W. Bromley, 1912

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New Jersey Harbor Commission. Map showing the Hudson River Waterfront between Liberty Island and Fort Lee, New Jersey, 1913, in New Jersey's Relation to the Port of New York: Fourth Preliminary Report of the New Jersey Harbor Commission

New York City Department of Docks and Ferries. Report on the Mechanical Equipment of New York Harbor. New York, 1912

New York, New Jersey Port and Harbor Development Commission. Joint Report with Comprehensive Plan and Recommendations. Albany: J. B. Lyon & Co.

Sanborn Map Company. Pier Maps of New York Harbor. New York. 1928

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1630-1923. Vol. 1. New York and Chicago: Lewis Historical
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Headlights: 7-15

E. Likely Sources Not Yet Investigated

Borough of Edgewater tax assessment records may have data on precise timing of transit shed construction and equipment changes, but in the borough's small offices we fear records as old as needed are long since gone. Spencer Kellogg archives in Buffalo, New York, noted above, have additional photographs of work at the Edgewater plant which may include views of the pier and transit shed (personal communication, Paul Reimondo).

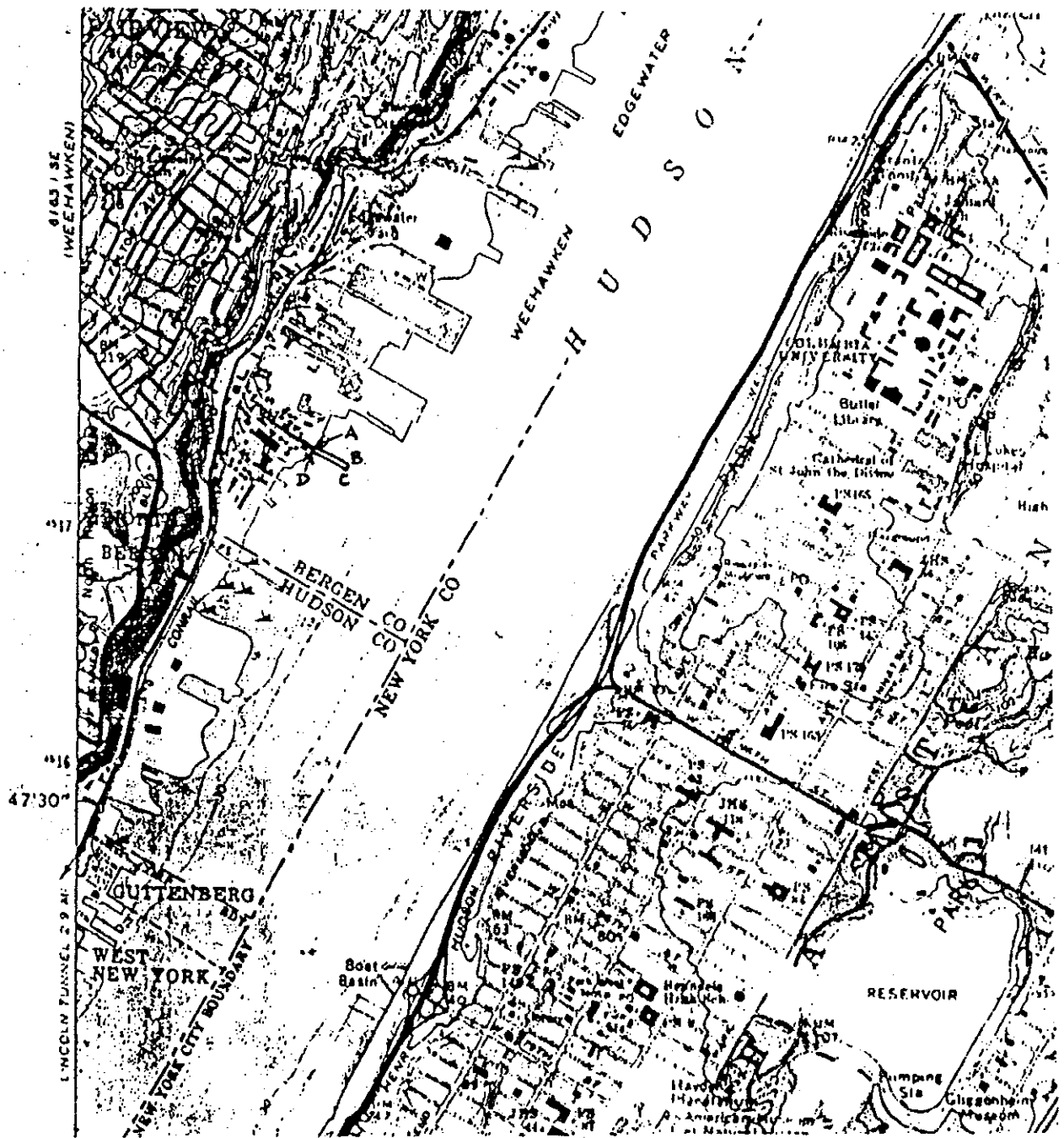


Figure 1. SPENCER KELLOGG PIER LOCATION AND UTM REFERENCES

Point	Zone	Easting	Northing
A	18	5 85 215	45 17 260
B	18	5 85 345	45 17 200
C	18	5 85 340	45 17 175
D	18	5 85 200	45 17 240

Central Park, N.Y. - N.J. Quadrangle Sheet
1:24,000

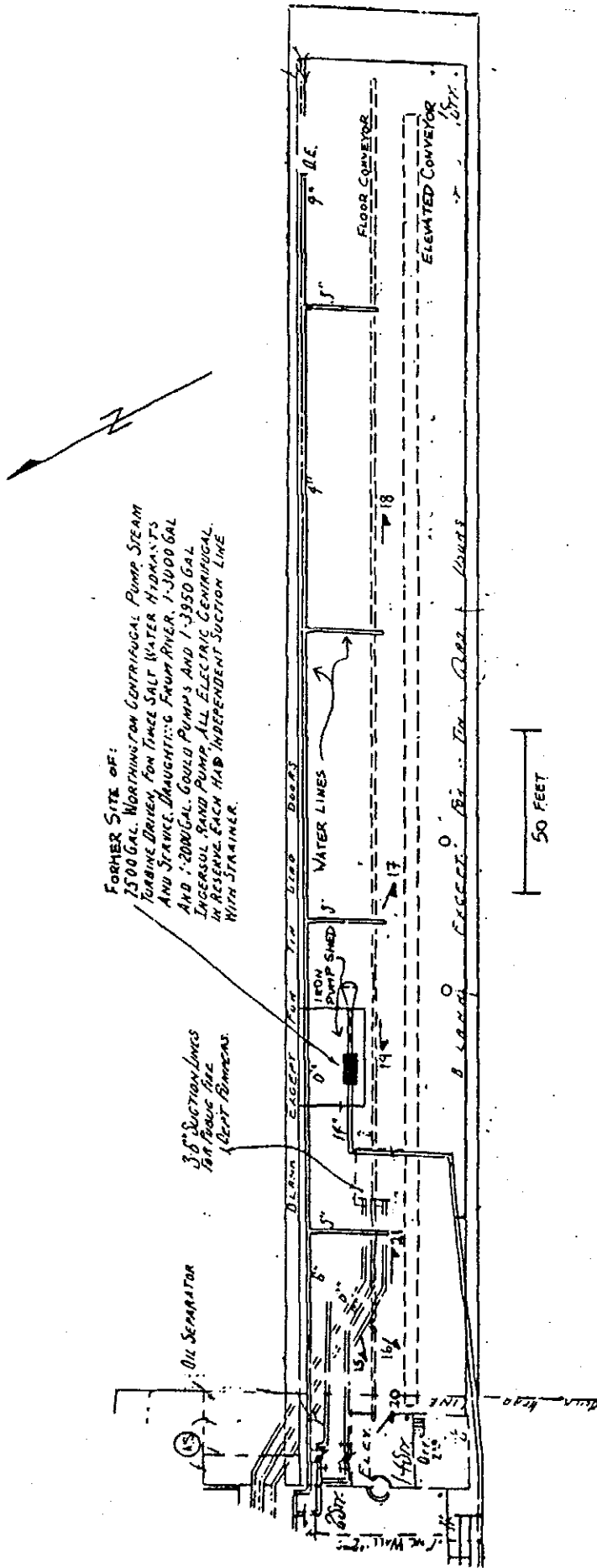


Figure 2. INTERIOR PLAN, SPENCER KELLOGG AND SONS, INC., PIER AND TRANSIT SHED

Numbered arrows show camera locations and views for Photographs 15-21

Source: Fire Insurance Rating Organization of New Jersey 1954

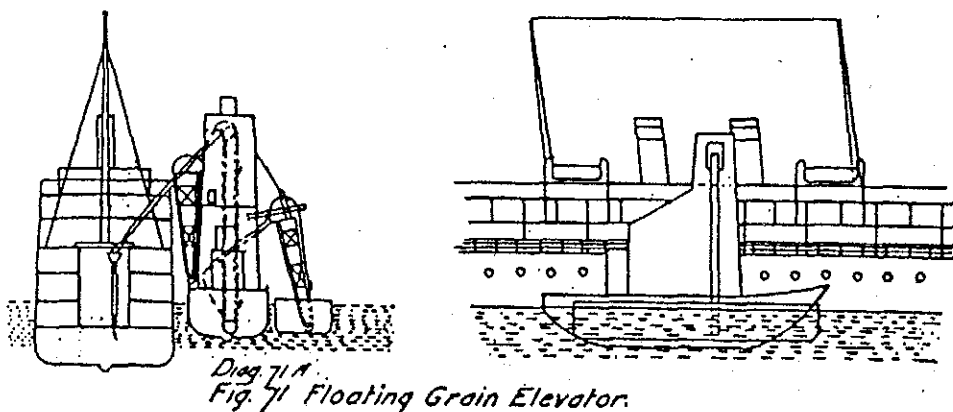
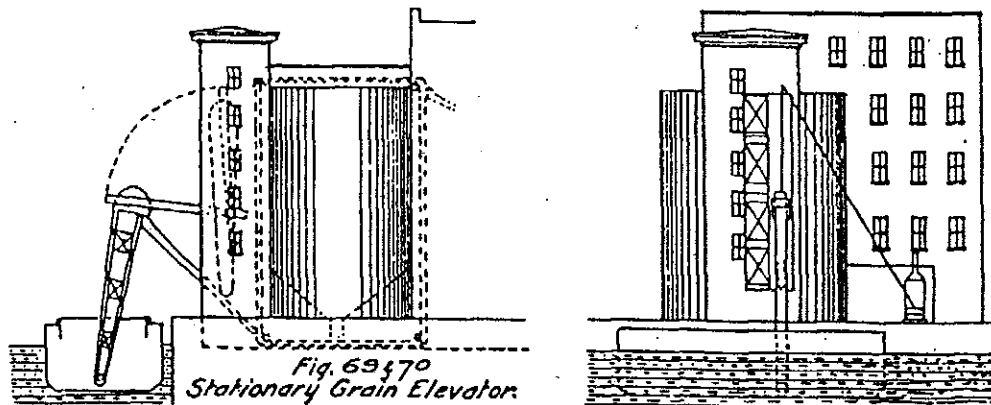
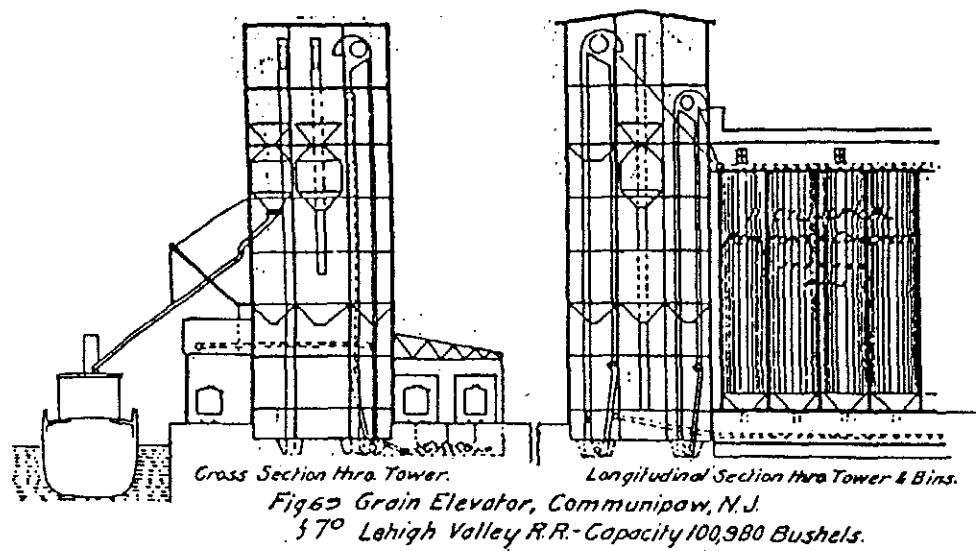


Figure 3. CONVENTIONAL EARLY TWENTIETH CENTURY GRAIN ELEVATING ARRANGEMENTS
Note the separate enclosures for each belt direction

Source: New York City Department of Docks and Ferries 1912

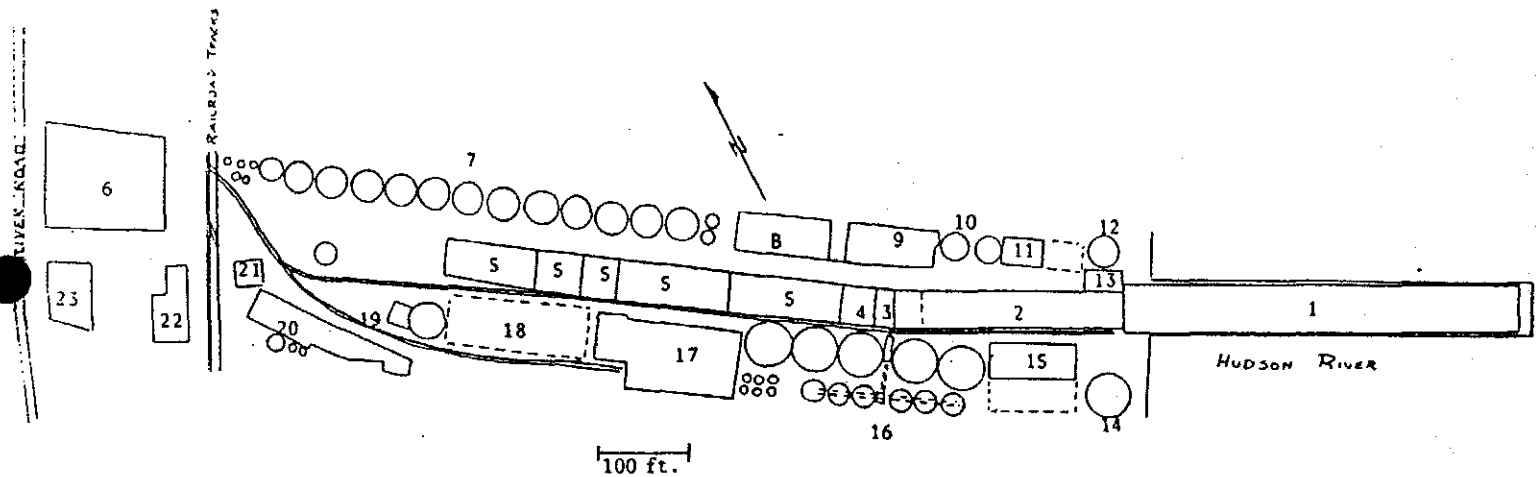


Figure 4. PRINCIPAL PLANT FEATURES, SPENCER KELLOGG AND SONS, INC., EGEWATER, NJ: 1954

- | | |
|--------------------------------|---|
| 1 Pier & Transit Shed | 13 Orum Shipping Shed |
| 2 Orum Filling Bldg. | 14 Vegetable Oil Tank |
| 3 Seed Elevator | 15 Restaurant & Finished Stock Storage |
| 4 Power House | 16 Flaxseed and Castor Bean Storage Tanks, with Overhead Conveyor |
| 5 Expeller Mills | 17 Hydraulic Press Refinery |
| 6 Shortening Plant | 18 Shed |
| 7 Vegetable Oil Tanks | 19 Pomace Storage Tank and Pomace Blower |
| 8 Boiler House | 20 Extracting/Distilling Plant |
| 9 Electric Cooker Bldg. | 21 Office |
| 10 Vegetable or Fuel Oil Tanks | 22 Garage & Machine Parts Storage |
| 11 Orum Shed | 23 Garage |
| 12 Fuel Oil Tank | |

Source: Fire Insurance Organization of New Jersey 1954